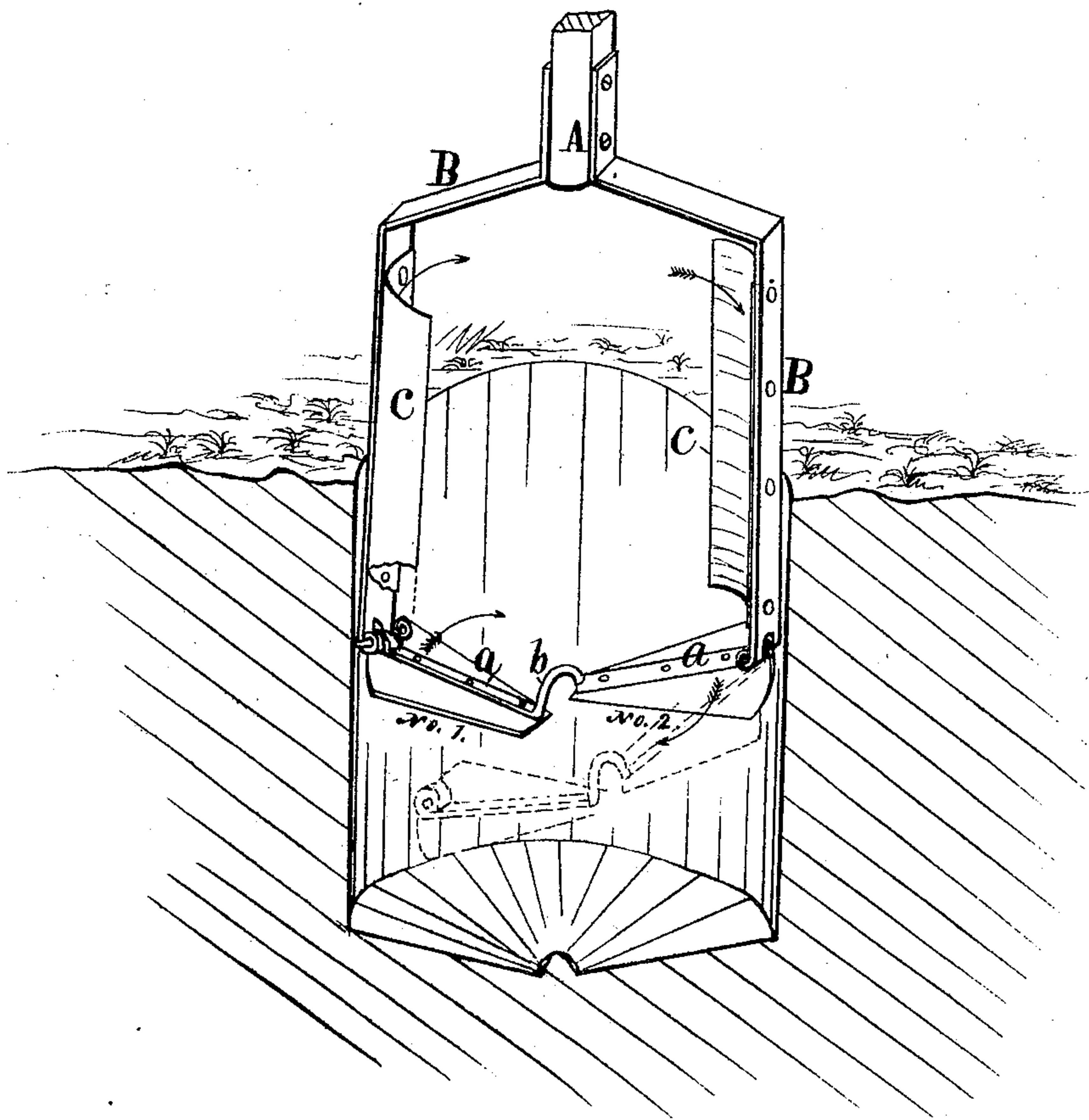


A. W. VAUGHN.
Earth-Augers.

No. 157,302.

Patented Dec. 1, 1874



Witnesses
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AUGUSTUS W. VAUGHN, OF BLOOMFIELD, IOWA.

IMPROVEMENT IN EARTH-AUGERS.

Specification forming part of Letters Patent No. **157,302**, dated December 1, 1874; application filed October 16, 1874.

To all whom it may concern:

Be it known that I, AUGUSTUS W. VAUGHN, of Bloomfield, in the county of Davis and State of Iowa, have invented an Improved Well-Auger, of which the following is a specification:

My invention consists in forming and combining two cutters, with a frame of fork-form, in such a manner that they will have a rigid central connection with each other and hinged connections with the forked frame, and diverge upward and outward in opposite directions from the center, so as to cut, pack, lift, and discharge dirt, as hereinafter fully set forth.

My drawing is a perspective view, illustrating the construction and operation of my invention.

A represents a central auger-shaft. B B are the prongs of the fork-formed auger-frame. They are made of suitable metallic bars, and rigidly secured to the shaft A in any suitable manner. Their bottoms are shaped to form a hinge-connection with the cutters that are designed to be spanned between and operated thereby. *a a* are the two ends of the cutter-frame, rigidly connected in the center by an arch or yoke, *b*, in such a manner that they will be twisted relatively to each other, and diverge upward in opposite directions from the central yoke *b*. The free ends are shaped to correspond with the ends of the prongs B, so that they can be readily hinged together. Nos. 1 and 2 are cutters, of sector-form, with eccentric arcs, rigidly secured to the twisted and angling cutter-frame *a b a*. The outside corners of their cutting-edges extend beyond the frame B B, and consequently cut a bore of larger diameter than the width of the frame. *c c* are plates rigidly secured to the prongs B B, and curved inwardly, so as to have eccentric faces that will press and pack and hold the column of loose dirt that is elevated by the angling rotating cutters Nos. 1 and 2. They may vary in width, as required to hold sandy or loamy soils.

The prongs B and their plates *c* may be spread wider at the bottom than at their tops to aid in packing and holding the columns of dirt.

In the practical operation of my auger the shaft A is turned by hand by means of a handle at its top, or by any suitable power and machinery, so that the forked frame B B, carrying the cutters Nos. 1 and 2, will revolve around a central pivot of earth, constantly remaining under the central arch or yoke *b*. The weight of the shaft and auger will cause the inclined and sharp edges of the rotating cutters to cut loose and press upward the soil upon which they rest, and thus sink a bore. The eccentrically-curved plates *c c* will press and pack and retain the loosened dirt in a compact column that is less in diameter than the width of the bore, and thereby provide ventilation to prevent the auger from sticking, and to facilitate its elevation to the top of the bore.

To discharge the load of dirt elevated in the auger, one of the pins or pintles of the hinge-joint connections between the bottom and the sides of the auger is withdrawn, to leave one side of the bottom drop, as indicated by the figure in broken lines.

I am aware that auger-cutters have been made angling and connected in the center, so as to stand in twisted positions relative to each other; but I claim that my manner of connecting them with the vertical and arched yoke *b*, to leave a pivotal point of solid earth constantly under the yoke and between the cutters during operation, is new and greatly advantageous.

I claim as my invention—

1. In a well-auger, the bars *a a*, carrying cutters Nos. 1 and 2, when rigidly connected in the center by the vertical and arched yoke *b*, substantially as described, and for the purposes specified.

2. The forked auger-frame A B B, carrying the eccentrically-curved plates *c c*, in combination with hinged and adjustable cutters 1 and 2, to cut, pack, carry, and discharge dirt in earth-boring operations, substantially as described.

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Witnesses:

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